Late stent dislodgement after aggressive post-dilatations: If you cannot retrieve it, deploy it!

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A 77-year-old man presented with exertional chest pain. He had a prior percutaneous coronary intervention for a chronic total occlusion of the right coronary artery (RCA) 5 months ago. The patient had four drug-eluting stents (DES) implanted from the distal RCA to the proximal segment of the vessel covering the RCA ostium. He underwent a repeat coronary angiography that showed a subtotal occlusion of the posterolateral branch (PLV) and a good angiographic result of the previous intervention (Supplementary material, *Figure S1*). Nevertheless, intravascular ultrasound (IVUS) demonstrated significant stent-vessel size mismatch and malapposition of the previously implanted stents (Supplementary material, *Figure S1*). After treating PLV with a drug-eluting balloon, multiple dilatations with various non-compliant balloons (NCB) were performed from the distal to the proximal RCA (Figure 1A). Contrast injection revealed the presence of RCA ostium dissection, at a segment that was previously covered by a Synergy Megatron (Boston Scientific) 4.0 × 16 mm DES (Figure 1B), likely due to the dislodgement of the previously implanted stent which had migrated in the ascending aorta (Figure 1C) and over the guiding catheter. After covering RCA ostium with a new DES (Figure 1D), it was decided to retrieve the dislodged stent to the right subclavian artery. Given the fact that the stent had been dilated with 5.5- and 6-mm NCBs, a very large bore femoral sheath (18 Fr) was needed to remove the stent outside the patient's body. Thus, the decision was to partly inflate an NCB at the distal stent segment and pull it back into the right subclavian artery, away from the right carotid and mammary artery (Figure 1E; Supplementary material, *Video S1*). Since it was not possible to retrieve it further distally and deploy it in a smaller artery such as the radial, and with a substantial risk of causing vessel injury, an NCB was inflated inside the dislodged stent implanting it in the subclavian artery. Angiography showed a good result that was additionally confirmed by IVUS imaging (Figure 1F; Supplementary material, *Video S2*).

Aggressive dilatations can lead to late stent dislodgement, especially in the presence of significant stent-vessel mismatch and malapposition. Although IVUS had been used for stent optimization during the initial recanalization of the RCA chronic total occlusion, it is likely that, at least partly, positive vessel remodeling led to the mismatch and malapposition.

With respect to the mechanism of stent dislodgement, we speculate that the large NCBs that were used for aggressive post dilations were retrieved before they had been fully deflated, entraining the ostial stent into the aorta. When retrieval of a lost stent is expected to be cumbersome, coronary stent deployment at a different segment of the vascular bed is a safe alternative approach [1].

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/polish_heart_journal.

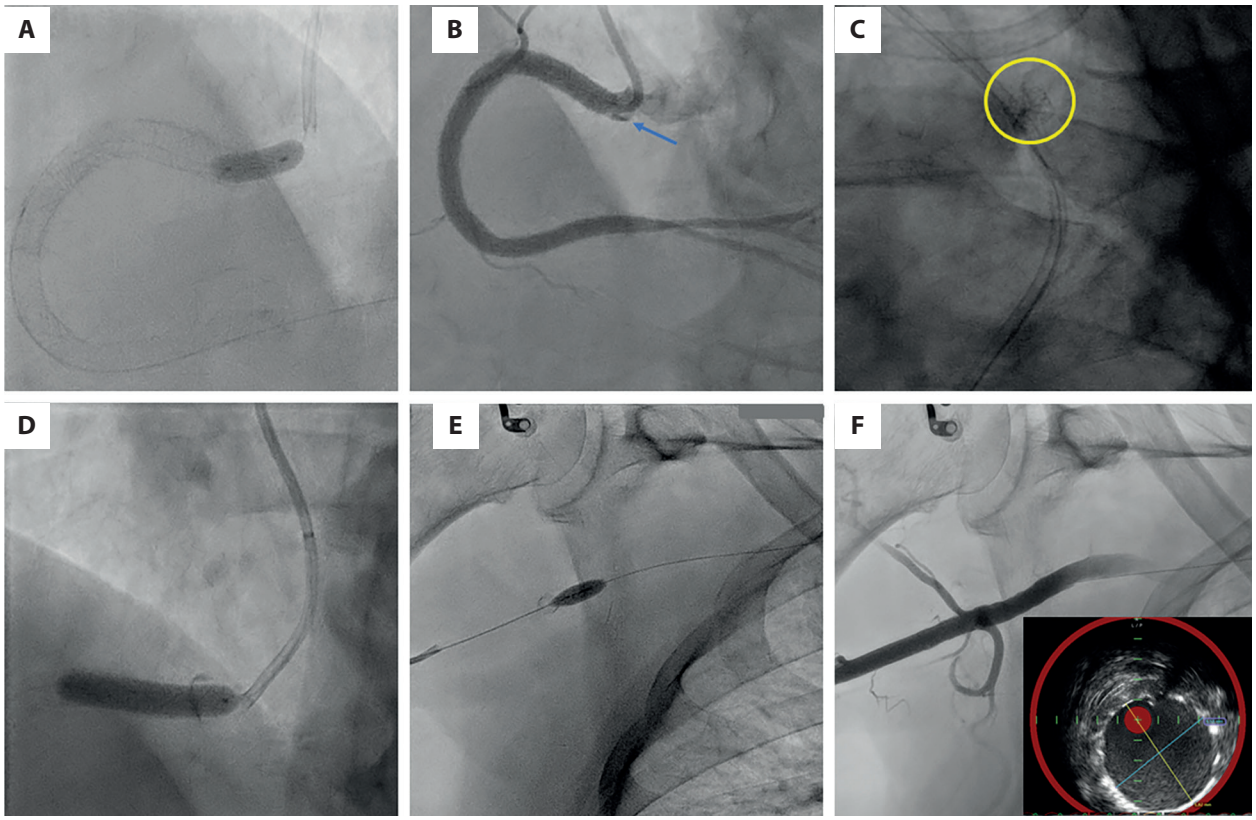

Figure 1. After engaging the right coronary artery (RCA) with a 6-Fr Amplatz Left-1 guide catheter, multiple dilatations with 4.0, 4.5, 5.0, 5.5 and 6.0 mm non-compliant balloons (NCBs) were performed from the distal to the proximal RCA (**A**). Contrast injection showed a dissection in the RCA ostium, with the previously implanted stent being absent (**B**). The previously implanted stent that was covering ostium of RCA was found "hanging" in the ascending aorta (**C**). A new 4.0 × 15 mm drug-eluting stent was placed slightly protruding into the aorta, successfully covering the dissection (**D**). A 6.0 × 8 mm NCB was partly inflated just distally to the dislodged stent and pulled back into the subclavian artery. The NCB was then inflated inside the stent, deploying it in the subclavian artery (**E**). Final angiography showed a good result, with intravascular ultrasound confirming adequate stent expansion and apposition (**F**)

Article information

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